KK 3/10/03

What is claimed is: ~~Claims~~

1. A DNA sequence represented by the following general formula

SUB A1

$$p/o - (A)_n - R_y, \text{ or}$$

$$p/o - R_y - (A)_n$$

wherein

p/o denotes the DNA sequence identified under SEQ ID No. 9 or a functional variant thereof, which retains its capability to bind to the lac repressor protein of Lactobacillus delbrueckii;

A denotes a gene coding for a polypeptide of interest,

n denotes an integer of ≥ 0;

R denotes a gene coding for the lac repressor protein as identified under SEQ ID No. 2 or a functional variant thereof, and

Y is 0 or 1.

2. The DNA sequence according to claim 1, wherein y is 1.

3. The DNA sequence according to claim 1, wherein the reading frame of gene coding for the lac repressor is reversed relative to the region p/o.

SUB A2

4. The DNA sequence according to claim 1 wherein the gene coding for a polypeptide of interest is selected from group consisting of genes encoding enzymes, cell surface proteins, or functional peptides.

5. The DNA sequence according to claim 4, wherein the gene coding for a polypeptide of interest is selected from the group consisting of genes coding for dextransucrase, glycosyltransferase, phytase, transglutaminase, peptidase, phenylalanine ammonia lyase, protease, cell surface antigens, bacteriocins, hormones or insulin.

6. The DNA sequence according to any of the preceding claims, which is devoid of catabolite responsive elements.

7. A DNA sequence coding for the lac repressor protein of lactobacillus delbrueckii as identified by SEQ ID No. 2 or a functional variant thereof retaining the capability to bind to the DNA sequence as identified by SEQ ID No. 9.

8. A recombinant microorganism harboring a DNA sequence according to any of the preceding claims.

9. The microorganism according to claim 8, which is a gram positive bacterium.

10. The microorganism according to claim 8 or 9, which is selected from the group consisting of lactic acid bacteria.

11. The microorganism according to any of the claims 8 to 10, wherein the DNA sequence of claims 1 to 7 is incorporated into the bacteria's chromosome or is harbored in a plasmid maintained extra-chromosomal.

12. The microorganism according to claim 8, which is CNCM I-2089, CNCM I-2090 or CNCM I-2091.

13. Use of a DNA sequence according to any of the claims 1 to 7 for the production of a polypeptide A.

14. The use according to claim 13, wherein the DNA sequence is harbored in a plasmid maintained extra-chromosomal or is in the bacteria's chromosome.

15. The use according to any of the claims 13 or 14, wherein expression is performed in gram positive microorganisms.

16. The use according to any of the claims 13 to 15, wherein expression is performed in microorganisms selected from the group consisting of lactic acid bacteria.

17. The use of a microorganism according to any of the claims 8 to 11 for the production of food products.